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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,603	09/17/2001	Craig N. Eatough	8333	8272

7590 12/26/2002

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EXAMINER

DOROSHENK, ALEXA A

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 12/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/954,603	EATOUGH ET AL.
	Examiner Alexa A. Doroshenk <i>AAD</i>	Art Unit 1764

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 13 February 2002.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.  
*Disposition of Claims*

## Disposition of Claims

4)  Claim(s) 1-31 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-31 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.  
Limitation: \_\_\_\_\_

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s)

4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 17 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 is unclear as to what applicant intends to claim by the phrase "on the one hand" and on the other hand". For examination purposes, the examiner has treated these phrases to mean discharging both coke and by-products as effluents from the pyrolyzer.

Claim 26 is unclear as to what "heating the introduced mixture to a temperature within the range of 800-1100°C at a rate within the range of 1500-2000°C/hour" means. For examination purposes, the examiner, as can best be understood, has treated the claim as meaning heating the introduced mixture from 800-1100°C.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-5, 7-9, 11-13, 15, 16, 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Weber et al. (4,352,720).

With respect to claims 1, 9, 28 and 29, Weber et al. discloses a method of producing coke comprising the steps of:

introducing a mixture of coal fines into a pyrolyzer (coking oven) (col. 2, lines 10-19);

pyrolyzing the mixture (col. 2, lines 15-17);

discharging coke (45) and by-products from the pyrolyzer (69);

separating the pyrolytic by-products by condensing means (fig. 2) into tar (31)

and off gas (78);

using the tar as a binder in the mixture without discharging to the environment (col. 2, lines 43-46 and col. 7, lines 44-48); and

using the off gas as a source of fuel in the pyrolyzer without discharging to the environment (col. 7, lines 25-30).

With respect to claims 3, 11 and 18, Weber et al. discloses wherein coal is crushed prior to introducing (col. 6, lines 1-4).

With respect to claims 4, 12 and 19, Weber et al. discloses wherein the mixture is formed into solid objects prior to introducing (col. 6, lines 21-40).

With respect to claims 5, 13 and 20, Weber et al. discloses wherein the coke is discharged as solid objects (molded coke) (col. 6, lines 31-40).

With respect to claims 7, 15 and 22, Weber et al. discloses wherein tar is fed back to the mixture prior to introducing (col. 2, lines 43-46 and col. 7, lines 44-48).

With respect to claims 8 and 16, Weber et al. discloses wherein separating comprises cooling of pyrolytic by-products by condensing means (fig. 2) into tar (31) and off gas (78).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2, 10, 17-20 and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (4,352,720) as applied to claims 1, 9 and 17 above, and further in view of Deering et al. (4,530,752).

With respect to claims 2 and 10, the process of Weber et al. discloses wherein coal fines and mixtures are introduced (col. 2, lines 10-11) but are silent as to what the mixture comprises.

Deering et al. teach another similar pyrolyzation process and disclose wherein fines introduced into the retort can be coal fines as well as coke fines (col. 8, lines 50-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to introduce coke fines as well as coke fines as the starting mixture since it is merely the selection of known starting materials for such a process, additionally, it economically utilizes coke fines that may otherwise be discharged.

With respect to claim 17, Weber et al. discloses a method of producing coke comprising the steps of:

introducing a mixture of coal fines into a pyrolyzer (coking oven) (col. 2, lines 10-19);

pyrolyzing the mixture (col. 2, lines 15-17);

discharging coke (45) and by-products from the pyrolyzer (69);

separating the pyrolytic by-products by condensing means (fig. 2) into tar (31) and off gas (78);

using the tar as a binder in the mixture without discharging to the environment (col. 2, lines 43-46 and col. 7, lines 44-48); and

using the off gas as a source of fuel in the pyrolyzer without discharging to the environment (col. 7, lines 25-30).

The process of Weber et al. discloses wherein coal fines and mixtures are introduced (col. 2, lines 10-11) but are silent as to what the mixture comprises.

Deering et al. teach another similar pyrolyzation process and disclose wherein fines introduced into the retort can be coal fines as well as coke fines (col. 8, lines 50-

55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to introduce coke fines as well as coke fines as the starting mixture since it is merely the selection of known starting materials for such a process, additionally, it economically utilizes coke fines that may otherwise be discharged.

With respect to claim 18, Weber et al. discloses wherein coal is crushed prior to introducing (col. 6, lines 1-4).

With respect to claim 19, Weber et al. discloses wherein the mixture is formed into solid objects prior to introducing (col. 6, lines 21-40).

With respect to claim 20, Weber et al. discloses wherein the coke is discharged as solid objects (molded coke) (col. 6, lines 31-40).

With respect to claim 22, Weber et al. discloses wherein tar is fed back to the mixture prior to introducing (col. 2, lines 43-46 and col. 7, lines 44-48).

With respect to claim 25, Deering et al. disclose wherein the coke breeze (fines) comprises 5-10% weight of the feed mixture (col. 8, lines 58-61).

With respect to claims 23 and 24, Deering et al. recognizes that the amount of coke introduced is a result effective variable (col. 8, lines 58-61) and therefore the amount of the remaining portion of the mixture, coal, is also a result effective variable.

As such, without showing unexpected results, the claimed percentage can not be considered "critical". Accordingly, one having ordinary skill in the art at the time the invention was made would have routinely optimized the percentage of coke in the mixture to obtain desired rate and efficiency of operation. *In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980). And since it has been held that where the general

conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art.

With respect to claim 26, Weber et al. discloses wherein the pyrolyzing act comprises heating within the range of 800-1100°C (col. 2, lines 47-49).

With respect to claim 27, Weber et al. disclose the temperatures of only portions of the cooling system (fig. 2), but it is held that any temperature sufficient to produce tar would have been obvious to one of ordinary skill in the art without undo experimentation and therefore the cooling temperature is held an a result effective variable.

As such, without showing unexpected results, the claimed temperature can not be considered "critical". Accordingly, one having ordinary skill in the art at the time the invention was made would have routinely optimized the cooling temperature to produce tar and obtain desired rate and efficiency of operation. *In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980). And since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art.

8. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (4,352,720) as applied to claims 1 and 9 above, and further in view of Nicaud et al. (6,043,289).

With respect to claims 6 and 14, Weber et al. discloses combining separated tar (col. 2, lines 43-46 and col. 7, lines 44-48), a binder (bitumen) (col. 7, lines 44-48) and fines mixture (col. 2, lines 10-11) in the introducing act, but is silent as to if synthetic binder is used.

Nicaud et al. teaches wherein the characteristics of the conventionally obtained binder bitumen are close to those of synthetic bitumen (col. 2, lines 38-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to select either conventionally obtained bitumen or synthetic bitumen as it is merely the selection of functionally equivalent binders known to the art. Additionally, Weber et al. does not preclude one from using a synthetic binder.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (4,352,720) in view of Deering et al. (4,530,752) as applied to claim 17 above, and further in view of Nicaud et al. (6,043,289).

With respect to claim 21, Weber et al. discloses combining separated tar (col. 2, lines 43-46 and col. 7, lines 44-48), a binder (bitumen) (col. 7, lines 44-48) and fines mixture (col. 2, lines 10-11) in the introducing act, but is silent as to if synthetic binder is used.

Nicaud et al. teaches wherein the characteristics of the conventionally obtained binder bitumen are close to those of synthetic bitumen (col. 2, lines 38-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to select either conventionally obtained bitumen or synthetic bitumen as it is merely the selection of functionally equivalent binders known to the art. Additionally, Weber et al. does not preclude one from using a synthetic binder.

10. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (4,352,720).

With respect to claim 30, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize all of the tar as binder and all of the off gas as fuel in order to efficiently use the products of the reaction as well as to avoid releasing any products into the environment.

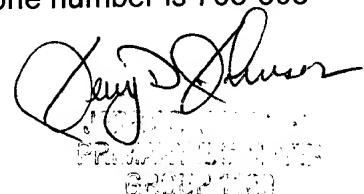
With respect to claim 31, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use condensed tar as the sole binder source and off-gas as the sole fuel for the pyrolyzer since both are sources the most readily available binder and fuels since both are products of the reaction, as well as being economical and environmentally sound method of product use.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenck whose telephone number is 703-305-0074. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



U.S. Patent and Trademark Office  
PTO-1469 (01-02-2001)  
GPO: 2001-172  
GPO: 2001-172

Application/Control Number: 09/954,603  
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December 23, 2002